

DEPARTMENT OF THE ARMY PERMIT

Permittee GENERAL PUBLIC

Permit No. GP 82-02 (198223002)

Issuing Office OMAHA DISTRICT, CORPS OF ENGINEERS

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

This permit allows for the construction of fish habitat enhancement and restoration features in creeks, streams and rivers in the State of Wyoming.

See Appendix A for description of authorized activities.

See Appendix C for application procedure.

Project Location:

Waters of the U.S. in Wyoming.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on October 31, 2004. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

See Appendix B for Special Conditions.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

() Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

() Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

- e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
- a. You fail to comply with the terms and conditions of this permit.
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

(PERMITTEE)

(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

MARK E. TILLOTSON
(DISTRICT ENGINEER)
COLONEL, CORPS OF ENGINEERS

10/6/99

(DATE)
BY: Paul R. Wemhoener
PAUL R. WEMHOENER, CHF
OPERATIONS DIVISION

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFeree)

(DATE)

APPENDIX A AUTHORIZED ACTIVITIES

All authorized activities are intended to create or enhance fish habitat components. See attached drawings for additional details associated with each feature.

1. **Log/Timber Overpour Plunges** - These features are used to provide additional pool habitat. A maximum of 50 cubic yards of material may be placed and redistributed per feature.
2. **Digger Logs** - These features are used to provide additional cover. A total of 50 cubic yards of material may be placed and redistributed per feature.
3. **Sills (perpendicular, diagonal, or K-Sill)** - These features are used to increase channel pool areas and assist in bank building. They provide additional holding, cover and resting habitat. No more than 50 cubic yards can be discharged and redistributed per feature.
4. **Scattered Boulder and Tree Placement** - These features are used to provide slack water areas for velocity protection and resting areas. A maximum of 100 cubic yards of rock and trees can be used per project.
5. **Tree and/or Rock Revetments** - These features are used for increased cover and resting habitat. A maximum of 1 cubic yard per lineal foot and no more than 1,000 lineal feet of bank can be treated per project.
6. **Log/Timber Deflectors** - These features are used for increased resting habitat. Maximum fill per deflector is 4 cubic yards.
7. **Spawning Gravels** - These fills are used to create and enhance spawning areas. No more than 50 cubic yards per spawning bed is allowed.
8. **Debris Catchers** - These features are used to catch wood debris and provide cover habitat. They can result in grade control and allow for bank development which provides additional cover. Fills must include upstream arch or "v" in design and cannot exceed 50 cubic yards per feature.
9. **Fish Barriers** - These features are used to produce controlled habitat areas, inhibit upstream migration of undesirable species as well as provide grade control. A maximum of 50 cubic yards can be discharged per barrier.
10. **Point Bar/Channel Constrictions with Associated Pools** - These features are used to provide increased velocity and deeper water areas for increased spawning and holding habitat. Constrictions cannot exceed 1,000 lineal feet of channel bank treated per project. No more than 1/3 acre of wetland can be filled per project. Project design must incorporate features which result in wetland creation.

PERMITTEE: General Public
DA PERMIT NO.: 198223002

APPENDIX B SPECIAL CONDITIONS

All activities authorized under this permit must comply with the following special conditions:

- 1. Water Quality:** The permittee must comply with any conditions established by the Wyoming Department of Environmental Quality's Water Quality Division or Environmental Protection Agency in accordance with their authority under Section 401 of the Clean Water Act of 1972. Individual certification must be obtained for class I waters.
- 2. Historic Properties:** No activity is authorized that would adversely impact sites included in the most current listing of the National Register of Historic Places or sites known to be eligible for such listing, sites included in the National Register of Natural Landmarks, or any other known historic, cultural, or archaeological sites until the District Engineer has complied with the provisions of 33 CFR Part 325, Appendix C pursuant the National Historic Preservation Act of 1966.
- 3. Threatened and Endangered Species:** No activity is authorized that is likely to jeopardize the continued existence of species, or their critical habitats, designated or proposed for designation as threatened or endangered pursuant to the Endangered Species Act of 1972. Individual NOIs will be consulted on as appropriate.
- 4. Wetlands:** Channel constriction activities are the only action which can occur in wetlands with fills not exceeding 1/3 acre for an entire project.
- 5. Tribal Rights:** No activity is authorized that would impair reserved tribal rights; including, but not limited to, water, fishing, and hunting rights.
- 6. Suitable Fill Material:** No discharge may consist of unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.) and material discharged must be free from toxic pollutants in toxic amounts as required by Section 307 of the Clean Water Act. In Wyoming, the Corps issued a notice of prohibition against the use of certain materials as fill in a Public Notice dated March 21, 1994.
- 7. Proper Maintenance:** Any structure authorized, **excluding channel constrictions and spawning gravels**, must be properly maintained, including maintenance necessary to ensure public safety. The maintenance condition does not include actions which are intended to achieve a certain plan, profile, and dimension of the creek channel.
- 8. Water Supply Intakes:** No discharge may occur in the proximity of a public water supply intake.
- 9. Wild and Scenic Rivers:** No discharge may occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status; unless the appropriate Federal agency, with direct management responsibility for such river, has determined in writing that the proposed discharge will not adversely effect the Wild and Scenic River designation, or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, Forest Service, Bureau of Land Management, Fish and Wildlife Service).
- 10. Restricted Waterways:** This permit cannot be used in the Bear, Bighorn, Clarks Fork Yellowstone, Green, Gros Ventre, Laramie, Little Snake, North Platte, Shoshone (North Fork, South Fork and Main), Snake, and Wind Rivers and their associated wetlands.

APPENDIX B
SPECIAL CONDITIONS CONTINUED

11. Stockpiling: Storage of excess soil, channel sediments, unwanted vegetation or other material in flowing water is not authorized.

12. Minimization: Permittees are required to minimize adverse effects of projects by:

- limiting the clearing of vegetation to that which is absolutely necessary for construction purposes
- reseeding areas along banks which are disturbed or cleared with vegetation indigenous to the project area
- maintaining close coordination with downstream water users, advising them of any water quality changes to be caused by the construction
- controlling all construction debris, fill, and other materials disposed on upland in such a way that it cannot enter a waterway or wetland
- undertaking all work in a waterway in such a manner so as to limit increases in suspended solids and turbidity
- ensuring that no petroleum products, chemicals, or other deleterious materials be allowed to enter or be disposed of in such a manner so that they could enter the water and that precautions be taken to prevent the entry of these materials into the water.

PERMITTEE: General Public
DA PERMIT NO.: 198223002

APPENDIX C APPLICATION PROCEDURE

All persons with a desire to construct habitat projects in accordance with General Permit (GP) 82-02 are required to submit a "**Notice of Intent**" (NOI) to the Corps at the following address at least 30 days prior to the anticipated start of construction: **U.S. Army Corps of Engineers, Wyoming Regulatory Office, 2232 Dell Range Blvd., Suite 210, Cheyenne, Wyoming, 82009-4942**

All NOI's must contain sufficient information for the Corps to determine if a project complies with the terms and conditions of GP 82-02. All NOI's must contain the information described below. However, the Corps, WDEQ, or EPA may require more detailed information if necessary to ensure compliance. No discharge is authorized until a letter of authorization is provided to the applicant by the Corps.

1. **Applicant:** Name, address, and telephone number of the applicant (landowner) and contact persons.
2. **Adjacent Landowners:** Name, address, and telephone number of adjacent property owners and a statement that they have been notified about the project.
3. **Project Location:** A legal description of the project location, including borrow and disposal sites, by quarter, section, township, and range. An enlarged copy of the appropriate portion of the U.S. Geological Survey topographic map for the area is the preferred method of specifying location information.
4. **Project Description:** A brief written description of the project including the primary purpose; composition and volume of fill material and areas of excavation; number and locations of project features, area and depth of fill in wetland areas and an estimate of the total wetland area that would be affected by the project based upon a wetland delineation (see item 6); types and numbers of construction equipment to be used, total area of surface disturbance, including uplands; and any other pertinent information.
5. **Project Drawings:** Drawings of the project, preferably on 11" x 17" paper. Drawings must include at least a plan view of the creek, stream or river with all project features easily discernible on it. For projects which involve fills in wetlands for channel constrictions, a baseline wetland delineation map showing existing wetland boundaries and water features. Channel constriction projects must also include accurate channel width measurements with cross sections.
6. **Wetland Delineation, Mitigation Plans, Monitoring and Channel Stability:** Projects which involve Point Bar/Channel Constrictions with Associated Pools that involve wetland fills must include a wetland delineation for the entire project area, including all areas that could be impacted, if the project includes activities that would require filling wetlands. Delineations must be completed by qualified individuals in accordance with the U.S. Army Corps of Engineers Wetland Delineation Manual dated January 1987 and any updates and supplements thereto. A list of wetland delineation consultants and more detailed information on delineation requirements is available upon request. Delineation maps must show all areas that meet the definition of wetland, as defined in the manual, and all other water features such as ditches, streams, ponds, and lakes. Mitigation plans which satisfy most of the information requirements outlined in Compensatory Mitigation Guidelines For Wyoming must be included for all wetland fills. Additionally, channel stability analyses and post-construction monitoring may be required for these types of actions.
7. **Letter of Concurrence:** A letter from the Wyoming Game and Fish Department stating that they have reviewed the design and concur with the proposed habitat improvement project.
8. **Photographs:** The applicant is encouraged to provide color photographs of the project area, especially typical wetland/upland boundaries, in order to facilitate permit processing.



The State
of Wyoming



Department of Environmental Quality

Jim Geringer, Governor

Herschler Building • 122 West 25th Street • Cheyenne, Wyoming 82002

ADMIN/OUTREACH	ABANDONED MINES	AIR QUALITY	INDUSTRIAL SITING	LAND QUALITY	SOLID & HAZ. WASTE	WATER QUALITY
307-777-7758 FAX 777-3610	307-777-6145 FAX 777-6462	307-777-7391 FAX 777-5616	307-777-7369 FAX 777-6937	307-777-7756 FAX 777-5864	307-777-7752 FAX 777-5973	307-777-7781 FAX 777-5973

September 20, 1999

Matt Bilodeau
US Army Corps of Engineers
Wyoming Regulatory Office
2232 Dell Range Boulevard
Cheyenne, WY 82009-4942

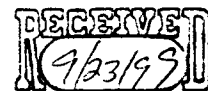
Re: Certification of pending Corps of Engineers permit number 198223002,
reauthorization of general permit 82-02, fish habitat structures in all waters within
Wyoming

Dear Mr. Bilodeau:

In accordance with the provisions of the state certification program for activities requiring dredge and fill permits from the US Army Corps of Engineers, this office has reviewed the proposed permit referenced above and offers the following comments regarding the permit.

The Department of Environmental Quality has, in the past, expressed some concerns regarding the use of this permit. Our primary concerns have related to:

- ▶ the potential for cumulative adverse water quality impacts as more structures are installed under this permit,
- ▶ the lack of adequate hydrologic studies in many cases to determine the suitability of the proposed structures for a specific reach, and
- ▶ the lack of follow-up investigations on these structures to determine their impacts on a particular site.



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While the permit, as proposed, does limit the amount of fill per structure or project, it does not limit the number of structures or projects on a particular stream nor does it provide for a specific evaluation of cumulative impacts over time. Furthermore, it does not necessarily assure adequate project design.

The general permit has been in place for the past 16 years and there is little information to indicate that substantial adverse effects have resulted from its application. Likewise, there is little reason to believe that adverse effects have not occurred in some cases. Treatments are often applied on a trial and error basis and various stream segments have received repeated applications over time. Overall, however, the permit has allowed for a great deal of beneficial work to be done with a minimum of bureaucratic delay. Based on the discussion above, we do not object to the reauthorization of the permit on class 2, 3, and 4 waters. Certification, however, is denied for applications on class 1 waters.

The restriction of use on class 1 waters does not mean that the type of structures described in the permit application are categorically denied for use on those waters. It means that because of the outstanding natural quality of those waters and the high level of protection afforded them by the regulations, blanket approval of hydraulic modification to the stream channels is inappropriate.

Class 1 waters are those located in congressionally designated wilderness areas, national parks, Fremont Lake and 14 other specifically designated stream reaches, certain tributaries to those reaches and adjacent wetlands. Work of this type is precluded from wilderness areas under federal law. The National Park Service does not typically undertake fish habitat improvement projects on streams within the two parks in Wyoming, and to our knowledge, has never used GP 82-02. The remaining 14 stream reaches and their tributaries and associated wetlands have been designated as class 1 primarily because of outstanding fishery quality and are really the only streams affected by this denial.

The purpose and need for fish habitat improvement on these waters is always questionable especially given the experimental nature of many habitat improvement proposals and the potential for unforeseen negative effects of hydrologic modifications. It should never be undertaken without a very complete hydraulic analysis and public interest review, both of which are foregone under a general permit.

There are isolated instances where a class 1 water may be in a degrading condition because of land uses or watershed conditions that are not easily controlled. In these cases, the installation of structures in the channel may indeed be desirable. However,

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a thorough understanding of the causes of the problem should precede a prescribed solution, and the 404 permitting process should strive to guarantee that projects on these waters are properly designed.

Even though habitat restoration on class 1 waters may be authorized under this general permit, we believe there are circumstances where an individual review is necessary. We encourage the Corps to use discretion to require individual permits where extensive modifications are proposed.

The Wyoming Department of Environmental Quality certifies this permit is acceptable for class 2, 3, and 4 waters of the state, provided the procedures described in the application for state certification are followed and reasonable care is taken to ensure that all disturbed areas are protected from erosion. This certification is denied on class 1 waters in Wyoming. The Department also reserves the right to amend, modify, suspend or revoke this certification or any of its terms or conditions as may be appropriate or necessary to protect water quality and associated beneficial uses.

Please be aware that this letter constitutes state certification of this permit as required by Section 401 of the federal Clean Water Act and does not provide an exemption from any other federal, state or local laws or regulations, nor does it provide exemption from legal action by private citizens for damage to property which the activity may cause.

Sincerely,

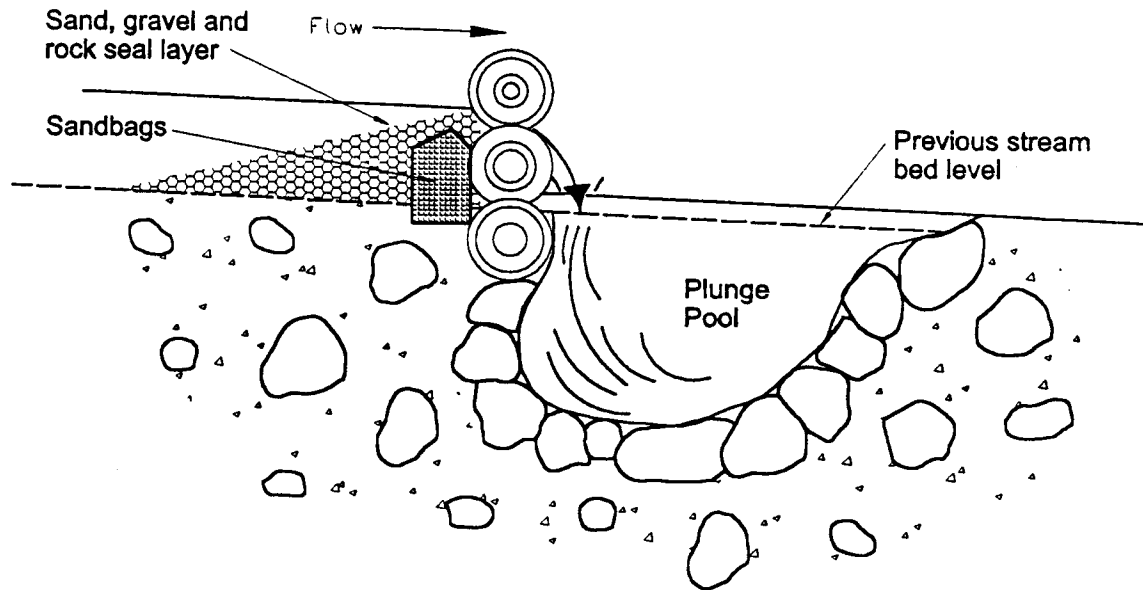


Dennis Hemmer
Director
Water Quality Division

DH/GB/BLS/mad 92393.ltr

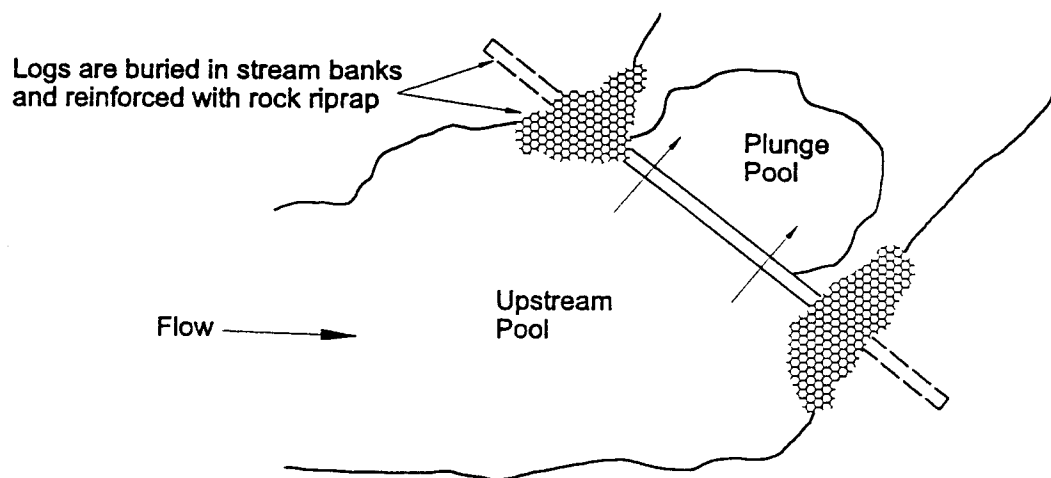
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Log/Timber Overpour Plunge Structure



Section

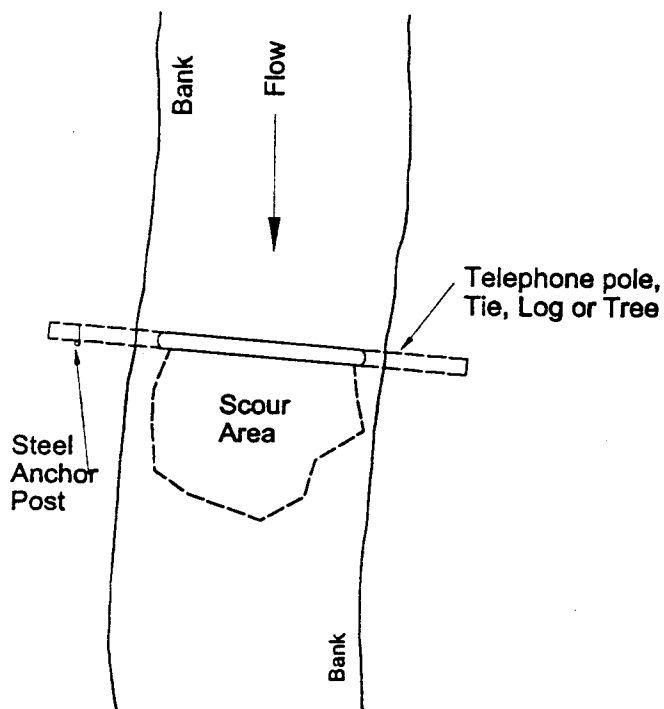
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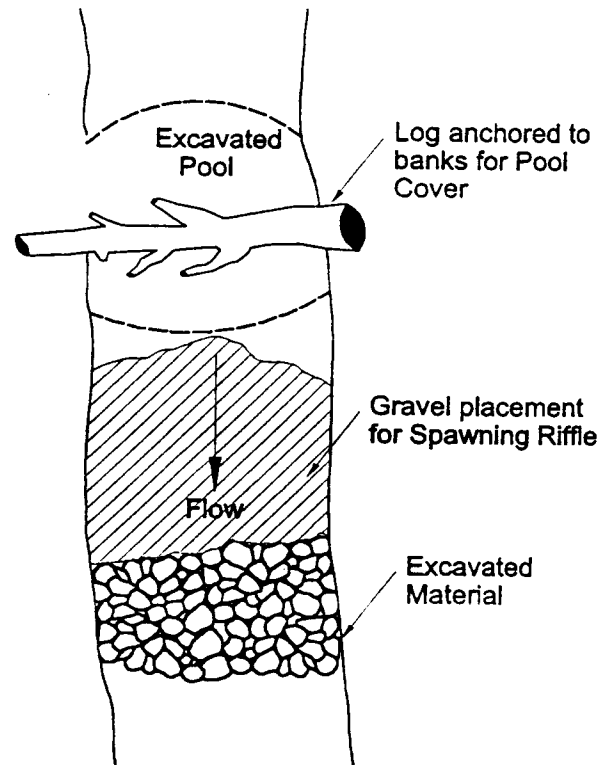
Plan

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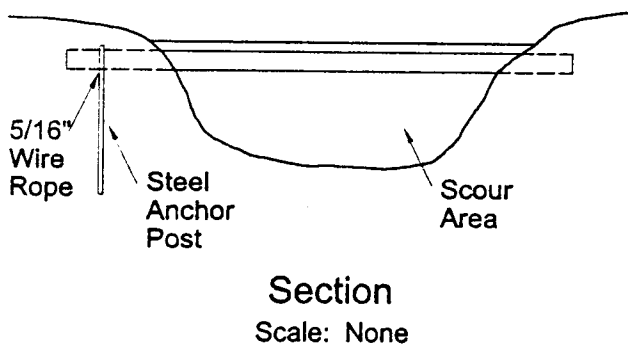
Digger Logs



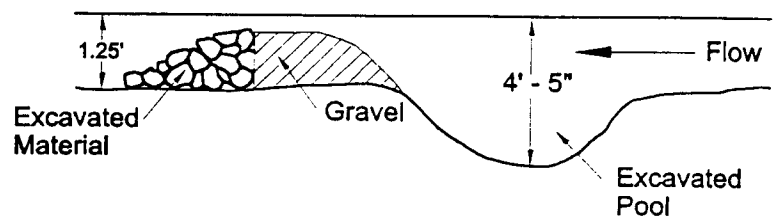
Digger Log
Plan
Scale: None



Log Covered Pool
& Downstream Spawning Riffle
Plan
Scale: None

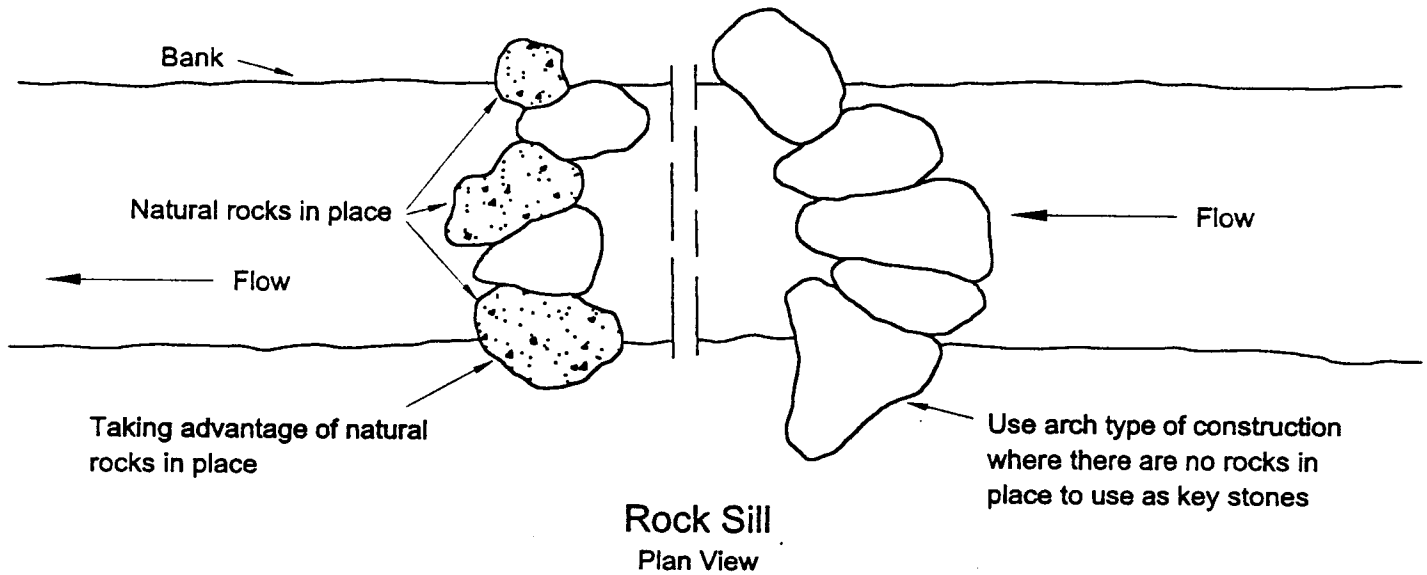


Section
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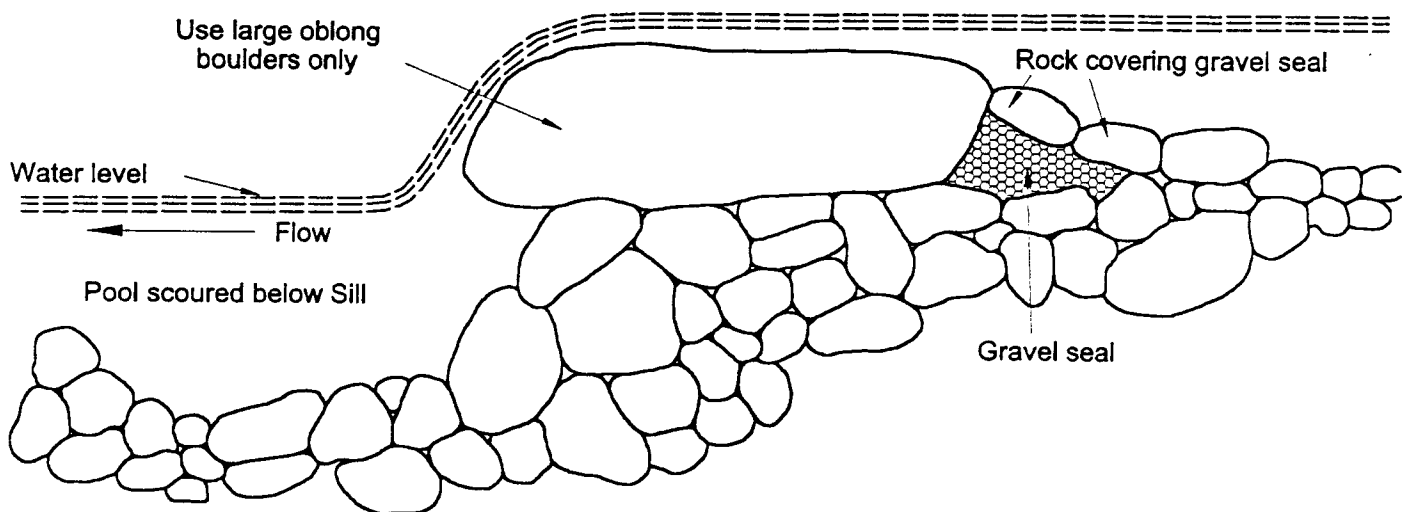


Section
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Rock Sill



Showing construction under different conditions

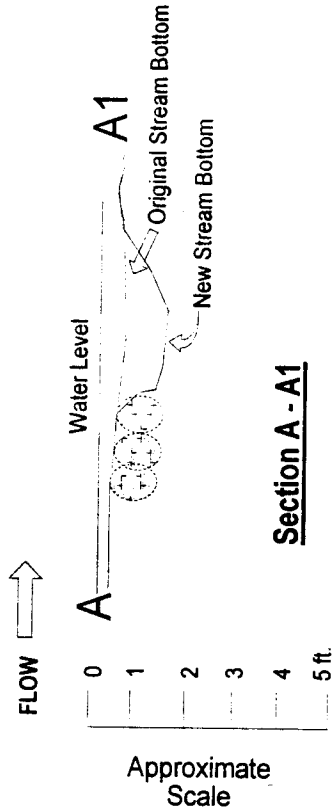
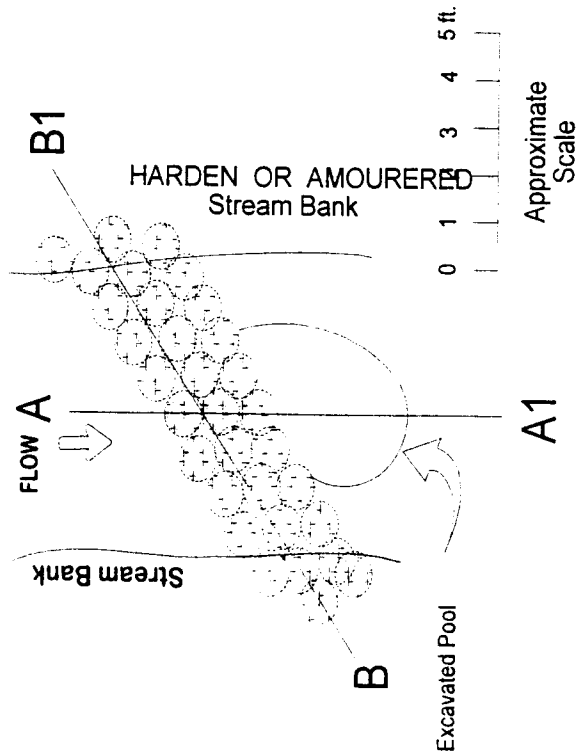


Rock Sill
Cross Section

ROCK \ BOULDER SILL

(Diagonal to Flow)

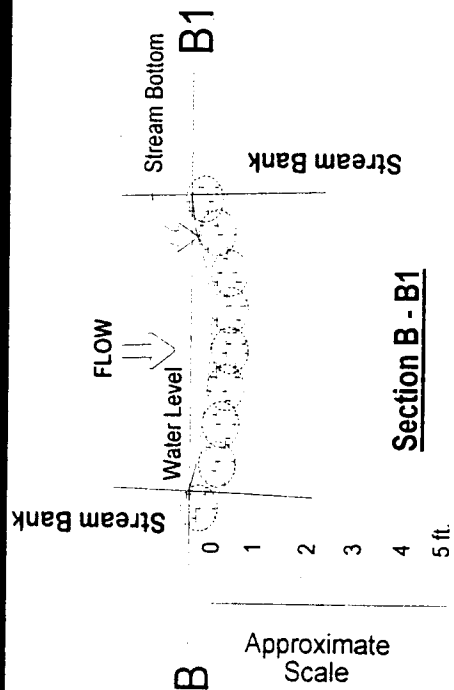
Plan View



DIAGONAL SILL

1. The DIAGONAL SILL is always lower in the middle.
2. The rocks **MUST** slope down from the bank to the MID point.
3. Use the material excavated from the pool to fill the spaces between the rock.
4. Anchor the ends into the bank.
5. Try to confine the low flow to the middle 1/3 of the creek. The **LOWEST POINT** may be placed at any point to move the current from side to side.
6. Amour the banks with rip-rap where needed to protect banks.

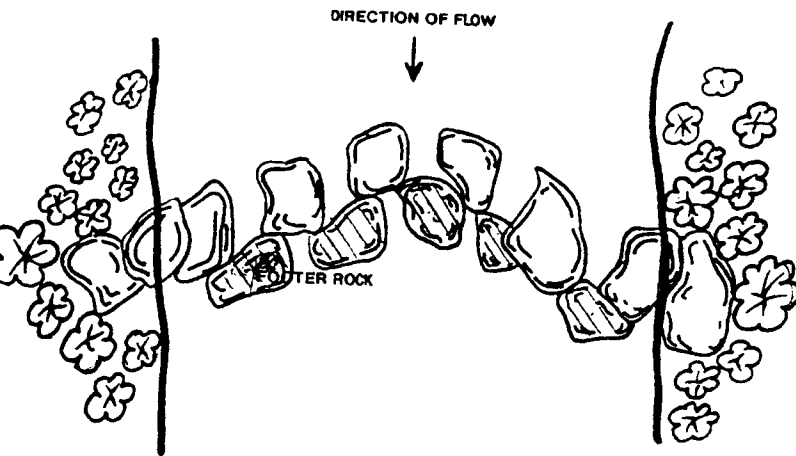
SCALE TO SITE



ROCK \ BOULDER SILL 3

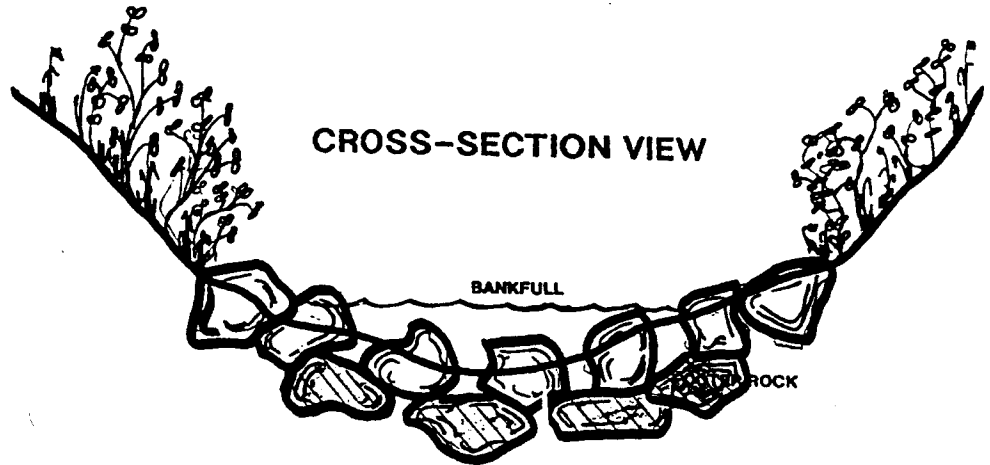
(Perpendicular to Flow)

PLAN VIEW

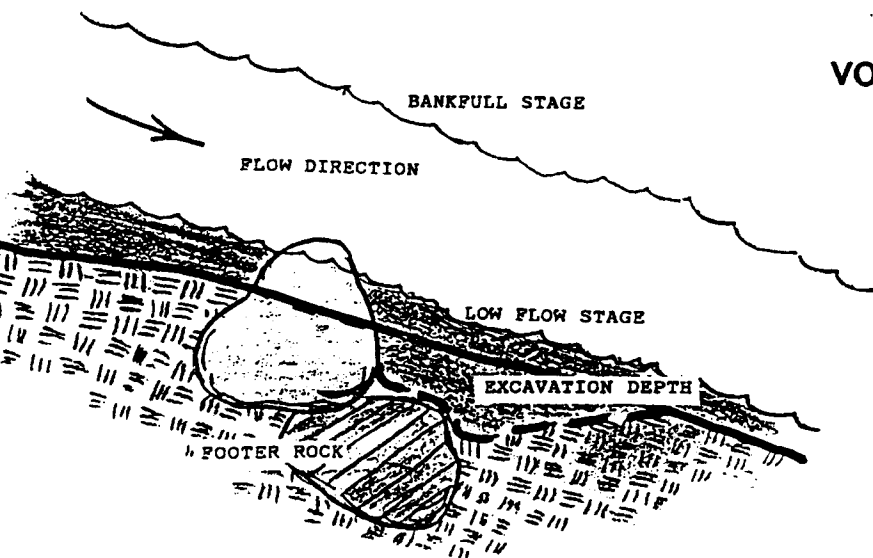


VORTEX ROCK WEIR

CROSS-SECTION VIEW

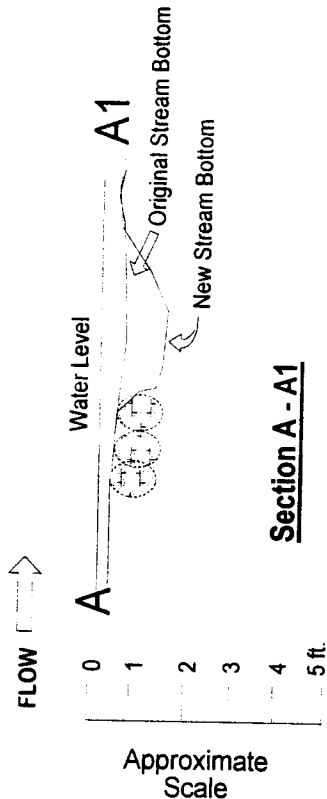
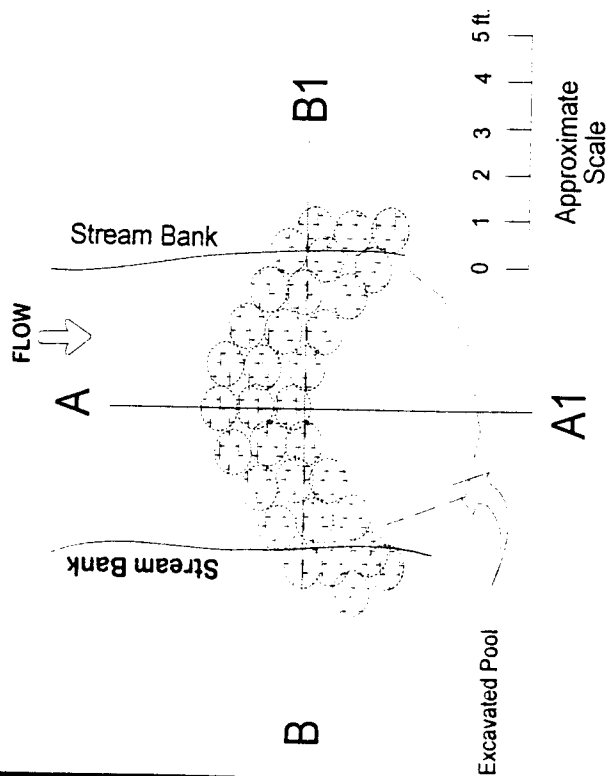


VORTEX ROCK WEIR



VORTEX ROCK WEIR
PROFILE VIEW

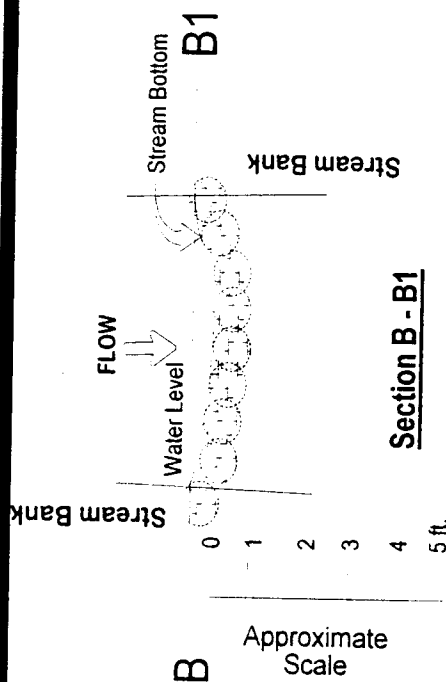
Plan View



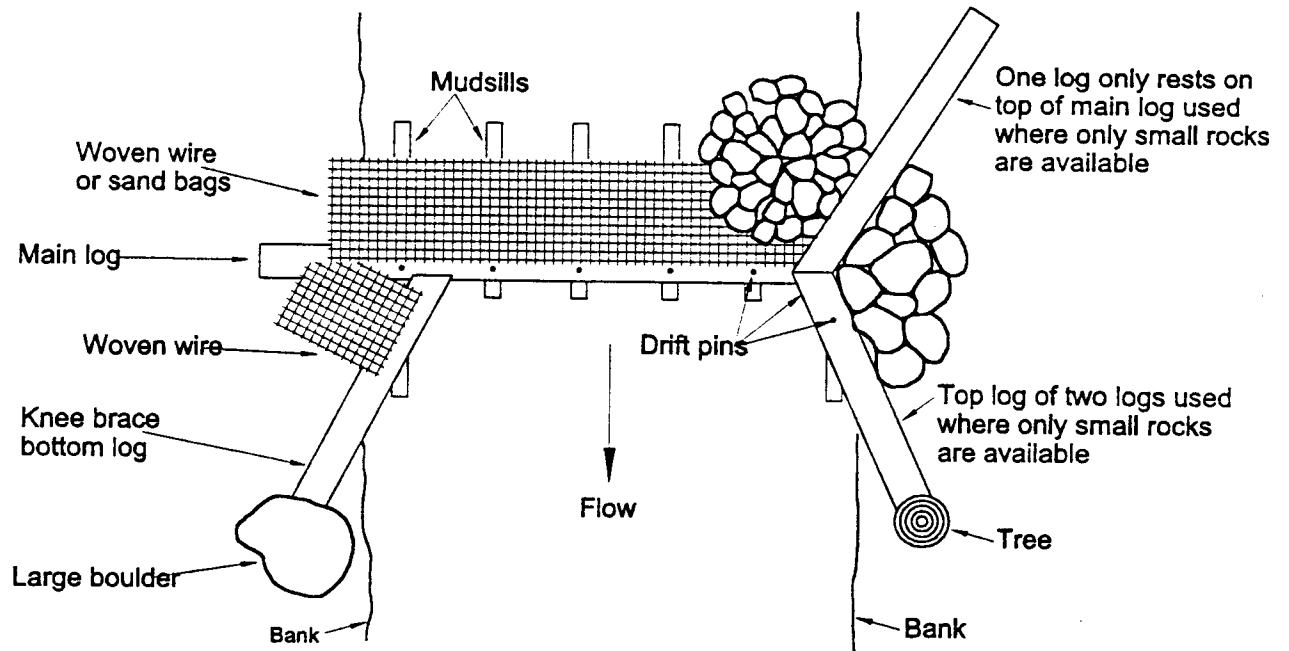
UPSTREAM "U" OR "V"

1. The U is always lower in the middle.
2. The rocks **MUST** slope down from the bank to the UPSTREAM point.
3. Use the material excavated from the pool to fill the spaces between the rock.
4. Anchor the ends into the bank.
5. Try to confine the low flow to the middle 1/3 of the creek. The upstream notch may be placed at any point to move the current from side to side.
6. Amour the banks with rip-rap where needed to protect banks.

SCALE TO SITE



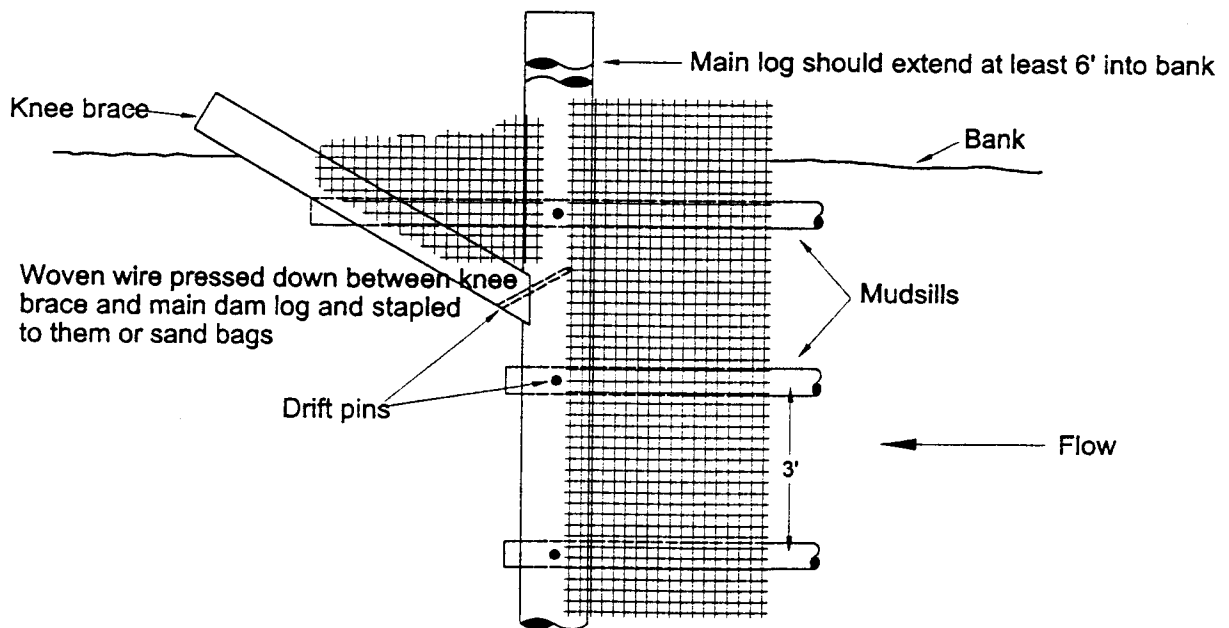
K - Sill



K-Sill

Plan View

Showing one end and seal partly constructed

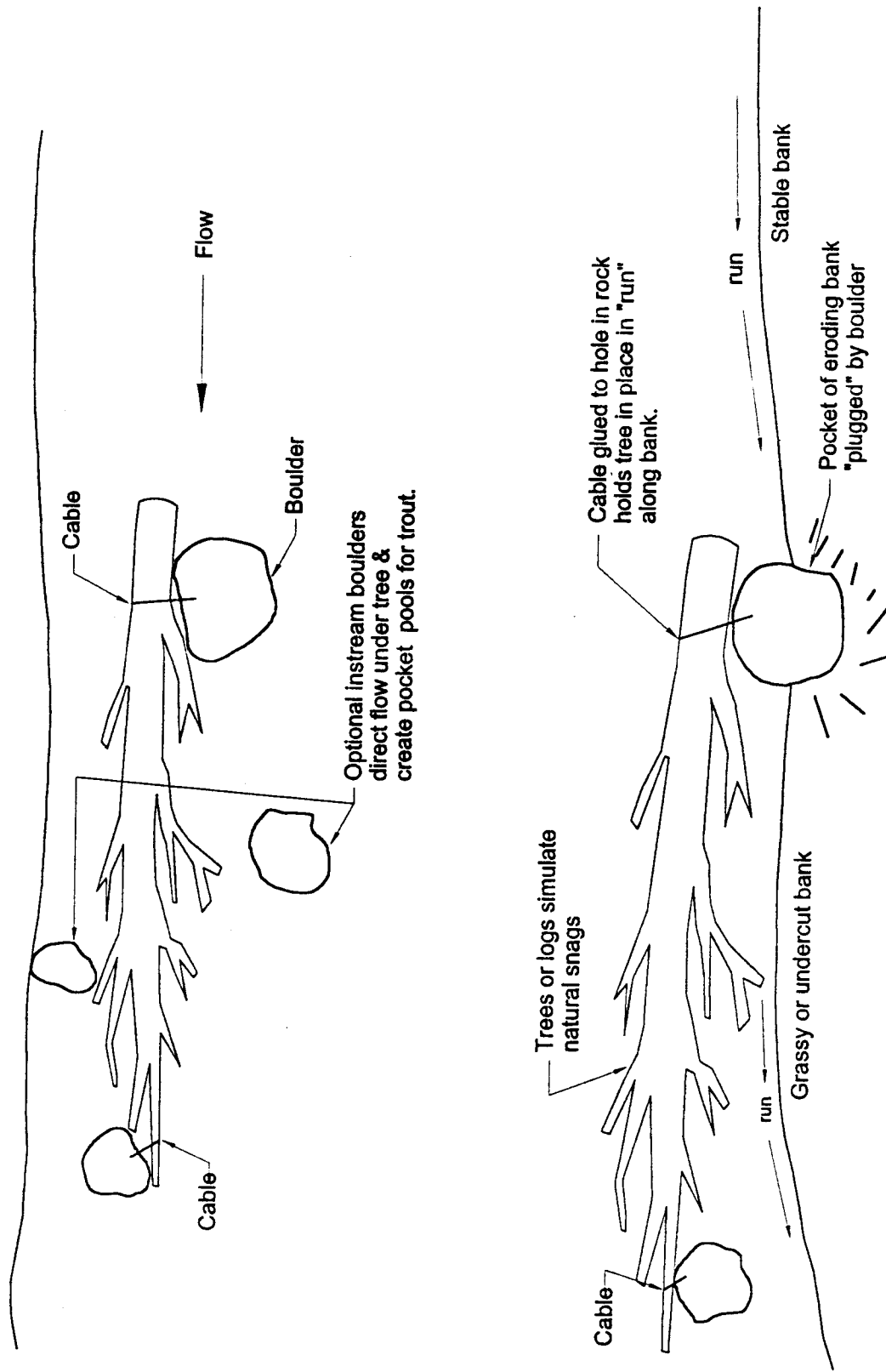


K-Sill Detail

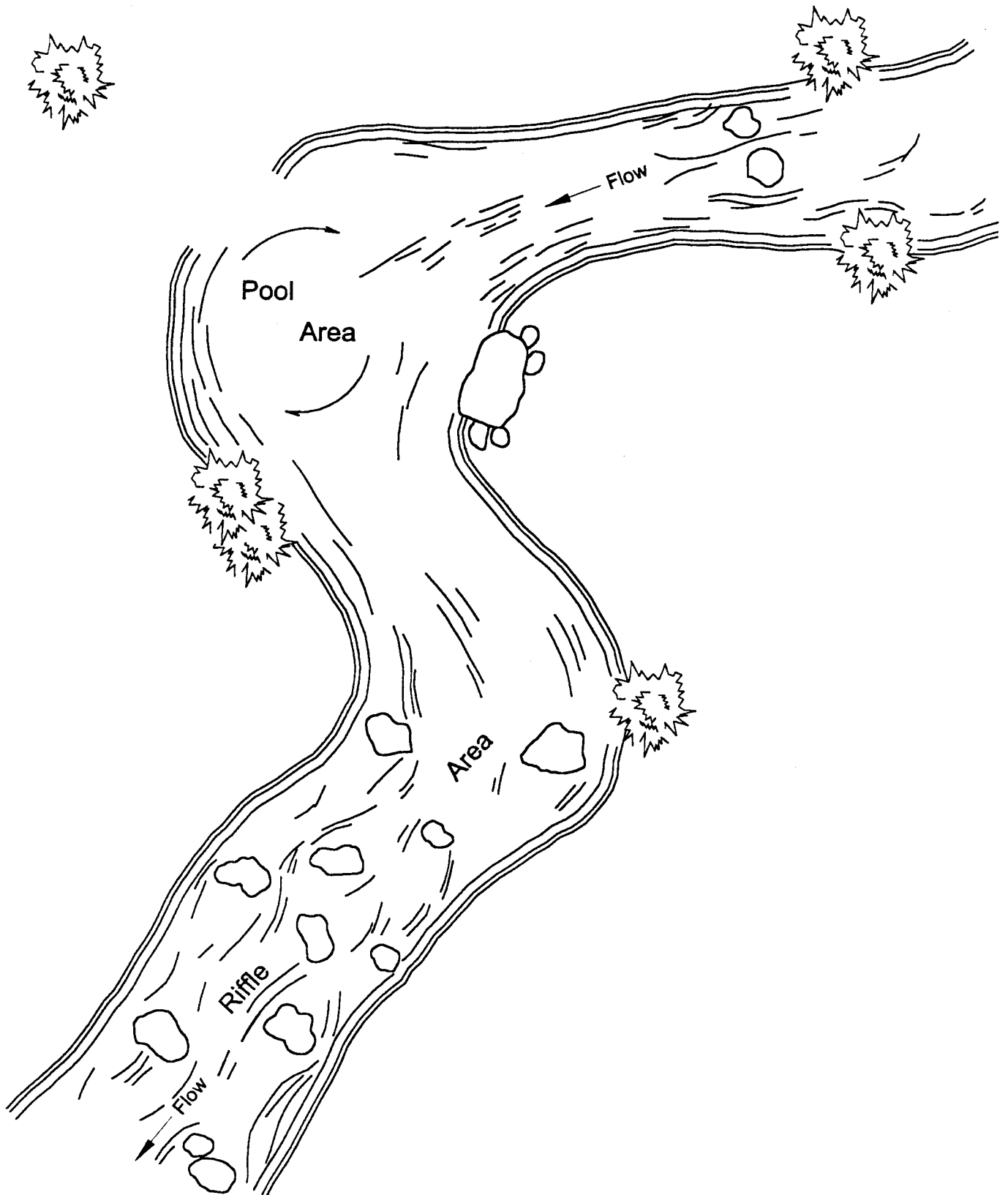
Plan View

Close up of one end with wire in place

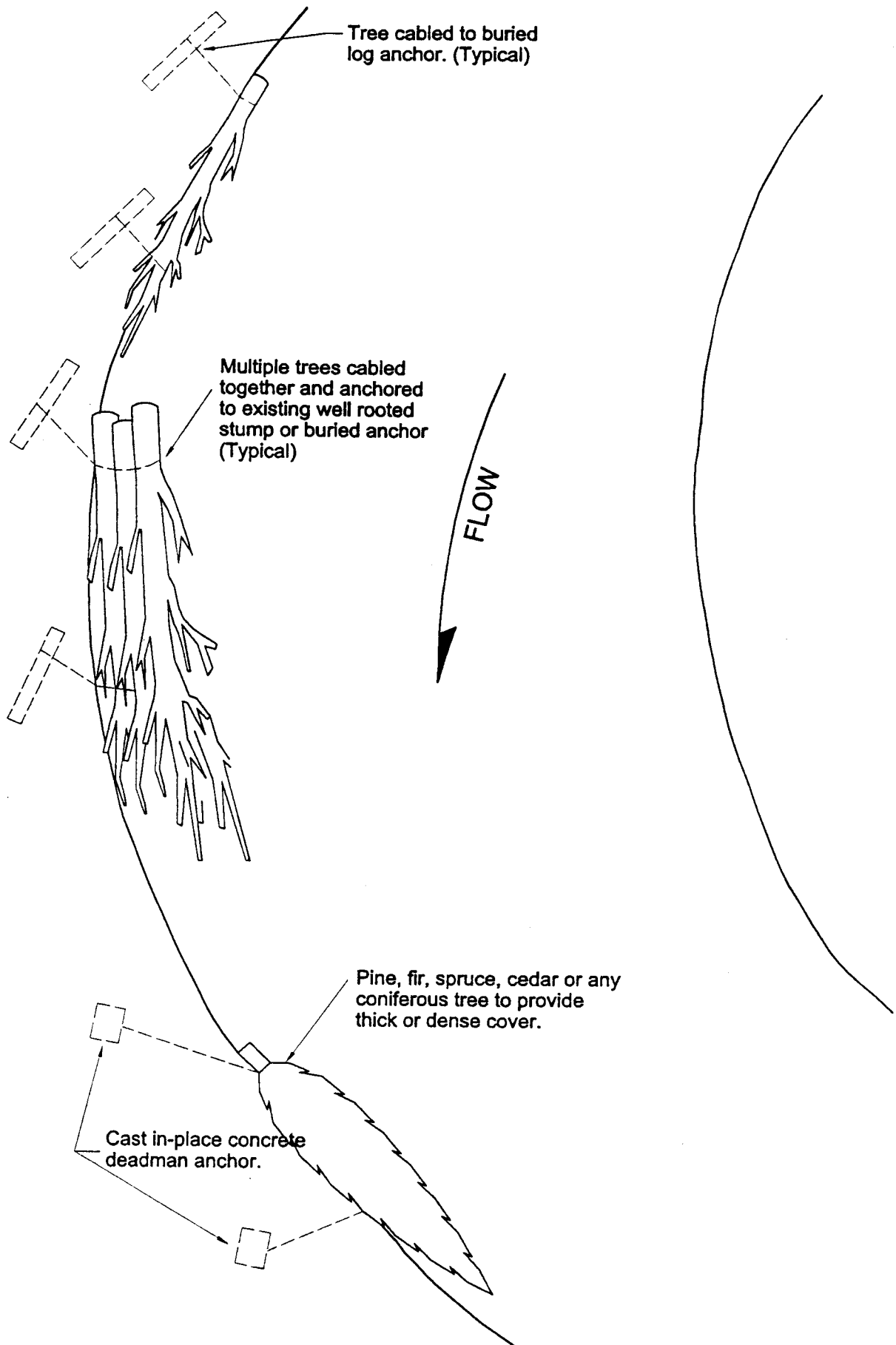
Scattered Boulders and Cover Trees



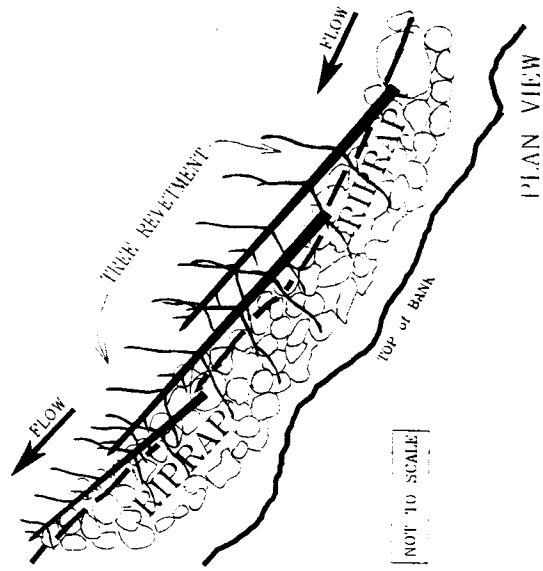
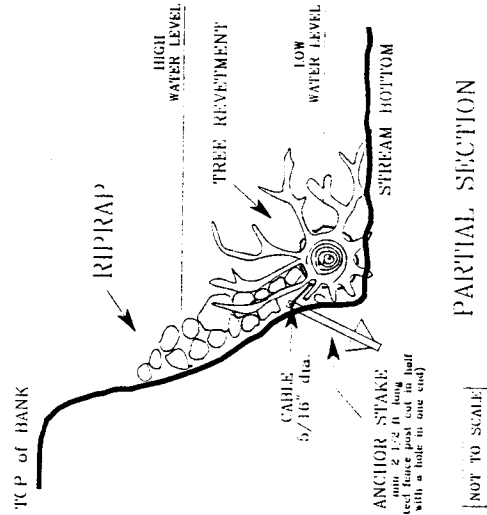
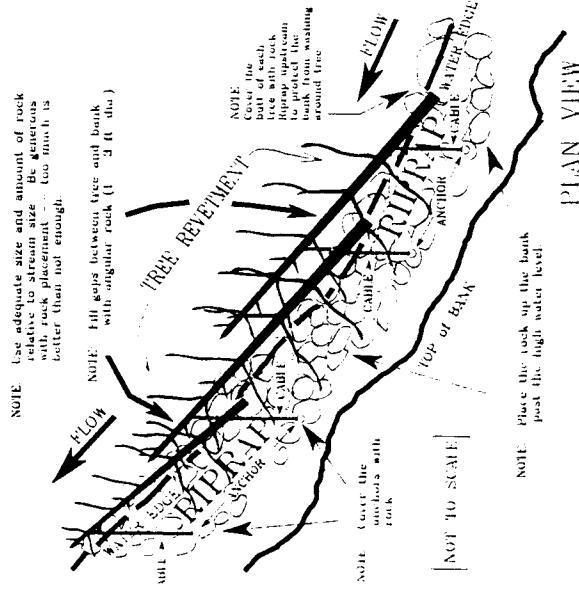
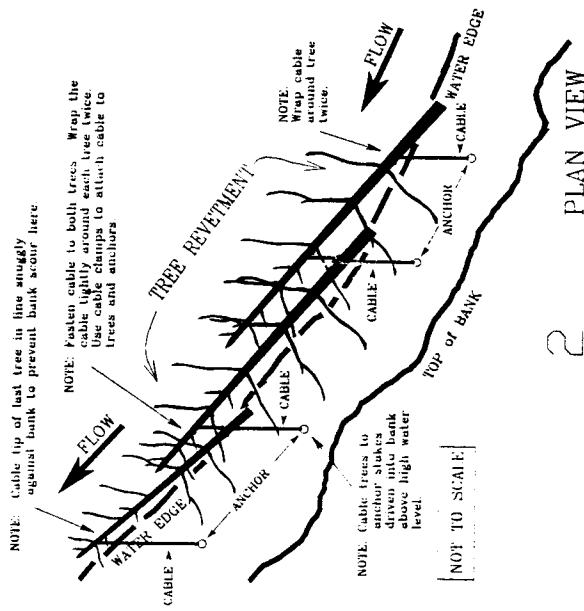
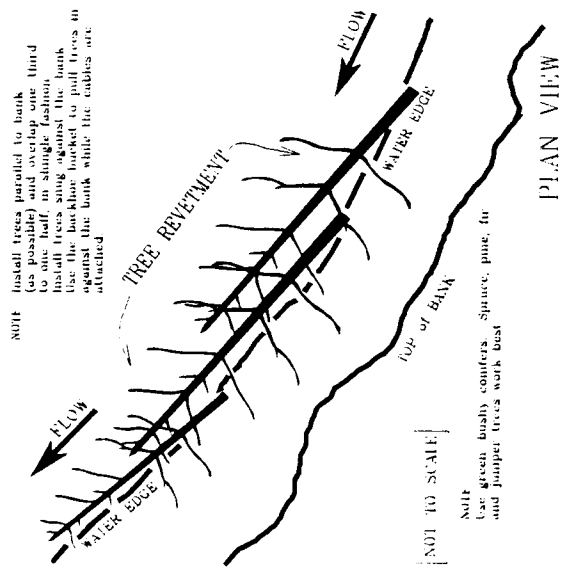
Random Boulder Placement



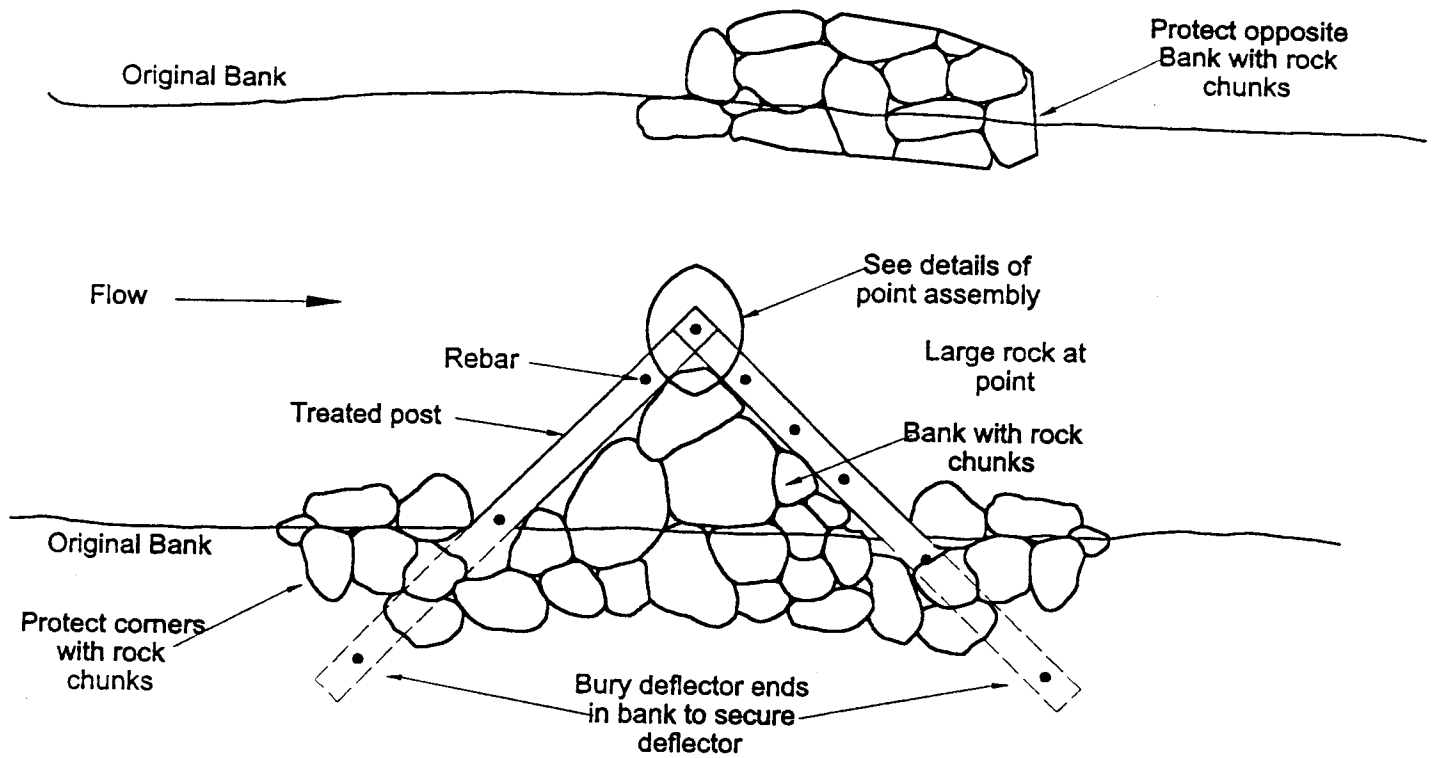
Tree Revetments & Crib Trees



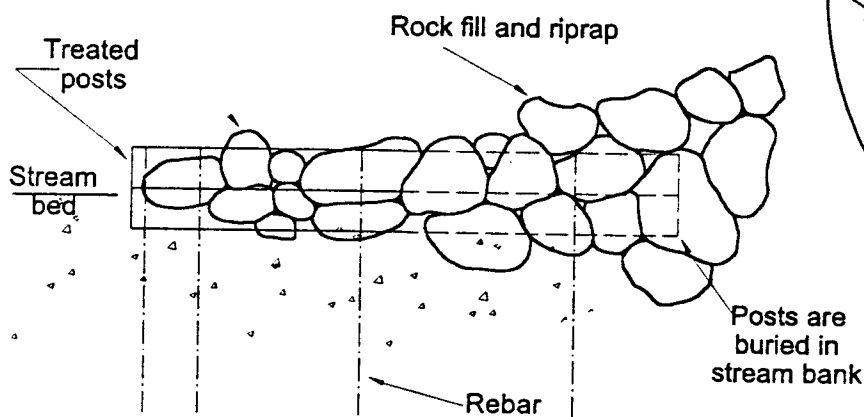
TREE AND ROCK REVETMENTS



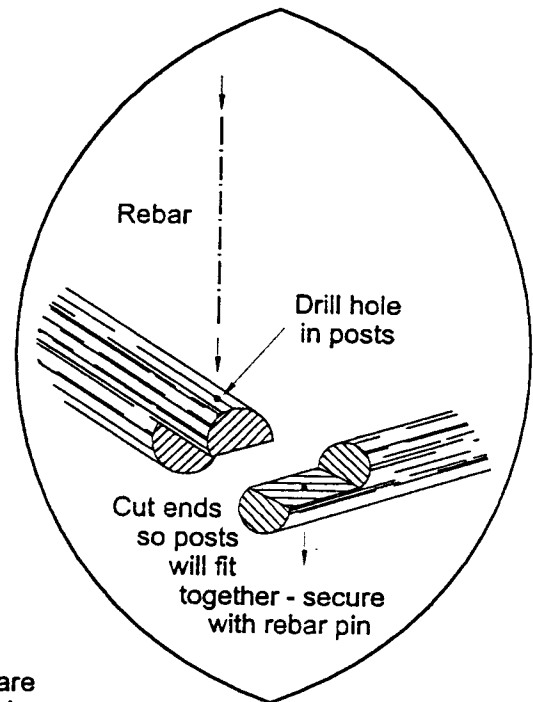
Log/Timber Deflector



Top View

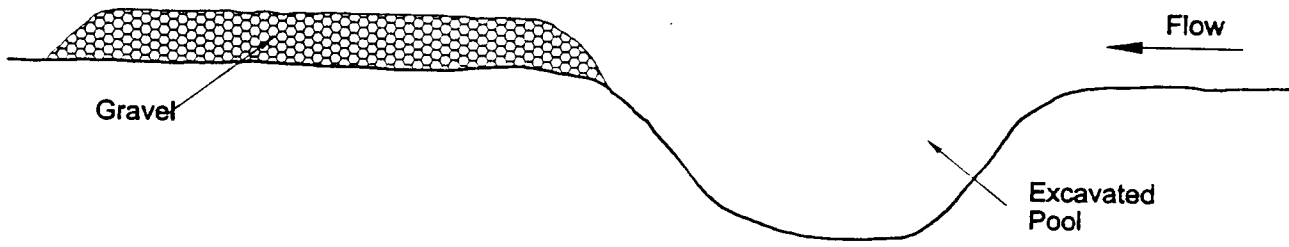


Side View

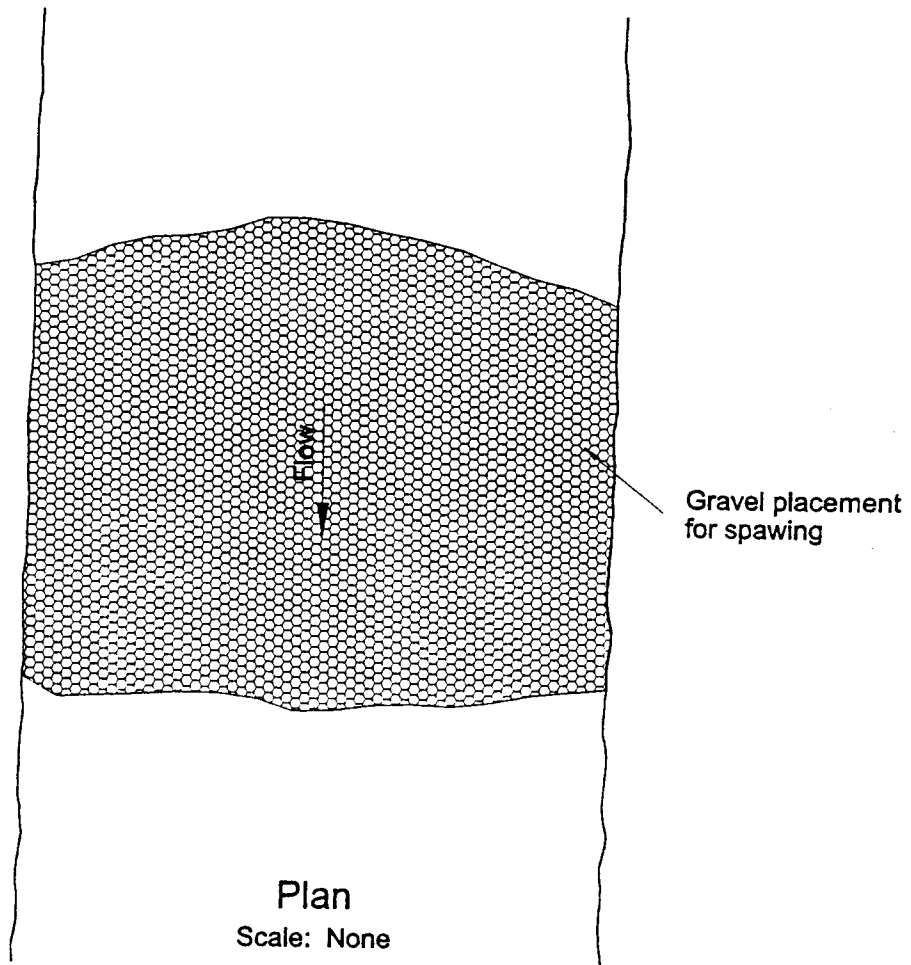


Details of Point Assembly

Spawning Gravels

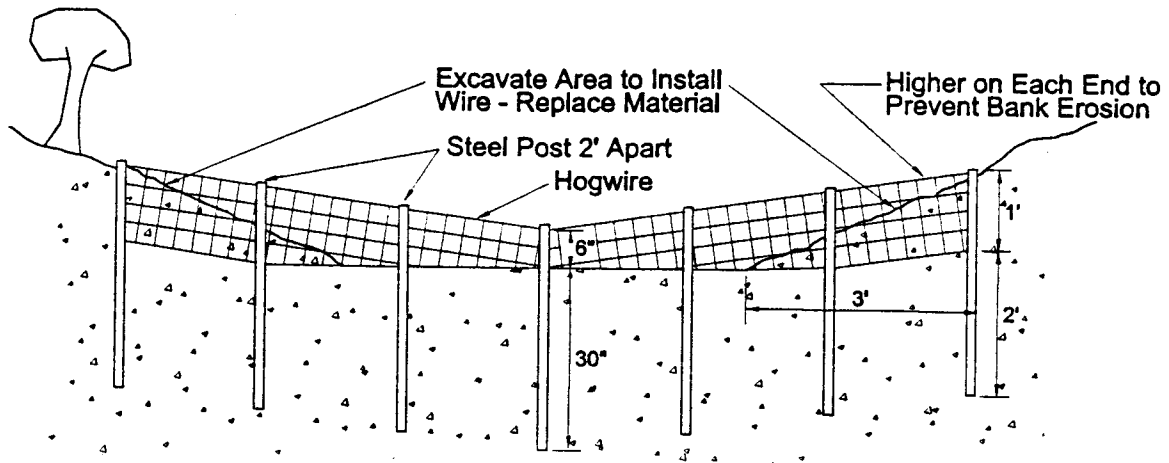


Section
Scale: None



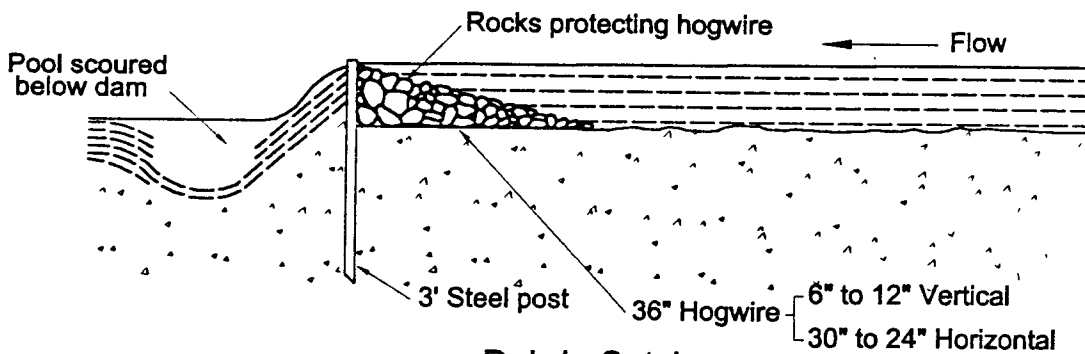
Plan
Scale: None

Debris Catcher



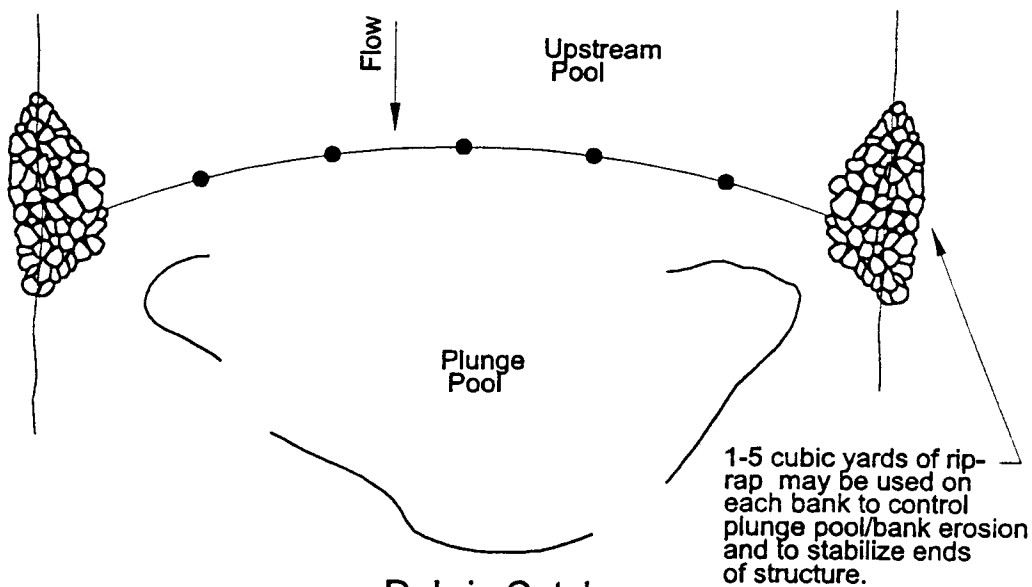
**Debris Catcher
Cross Section**

Scale: None



**Debris Catcher
Longitudinal Section**

Scale: None

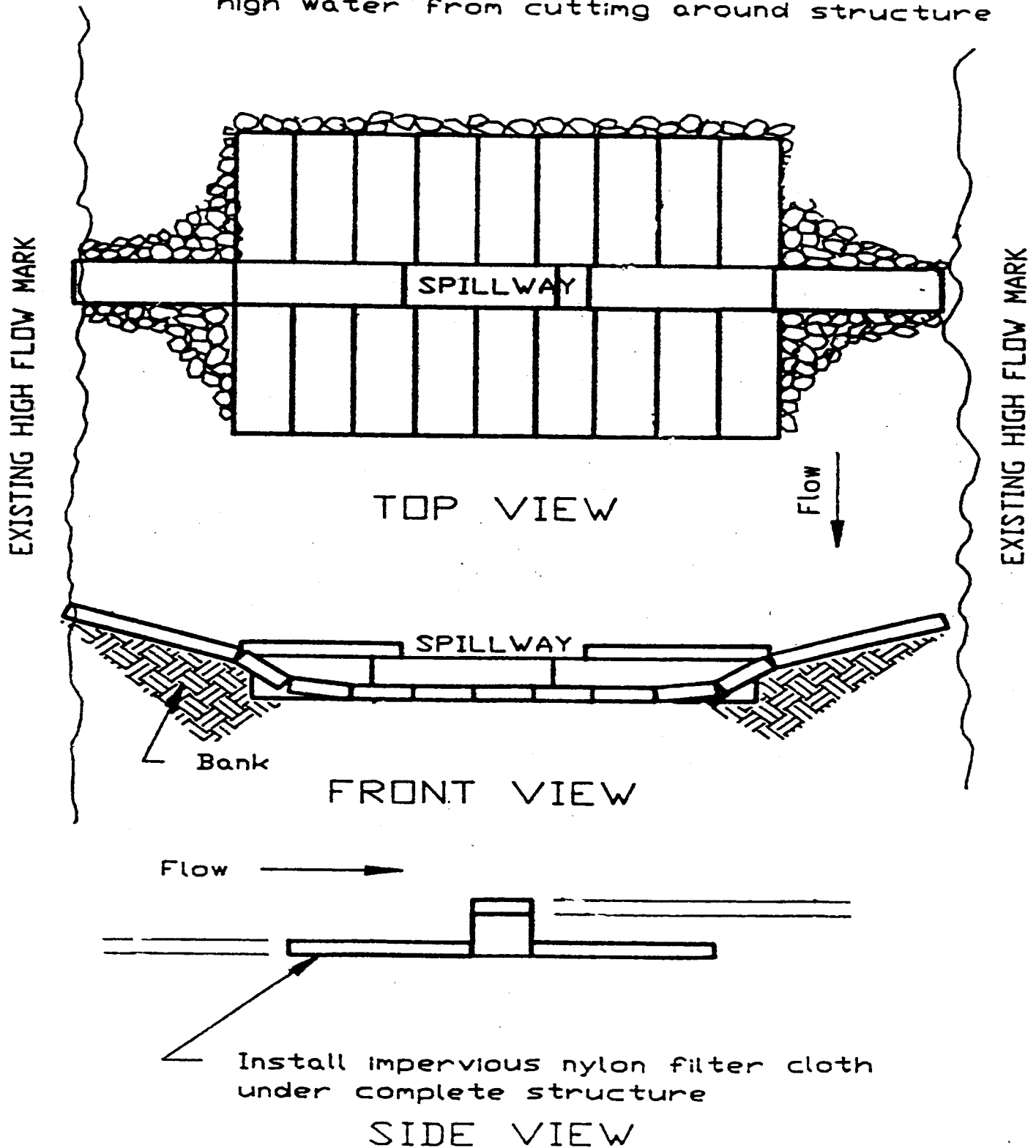


**Debris Catcher
Plan View**

Scale: None

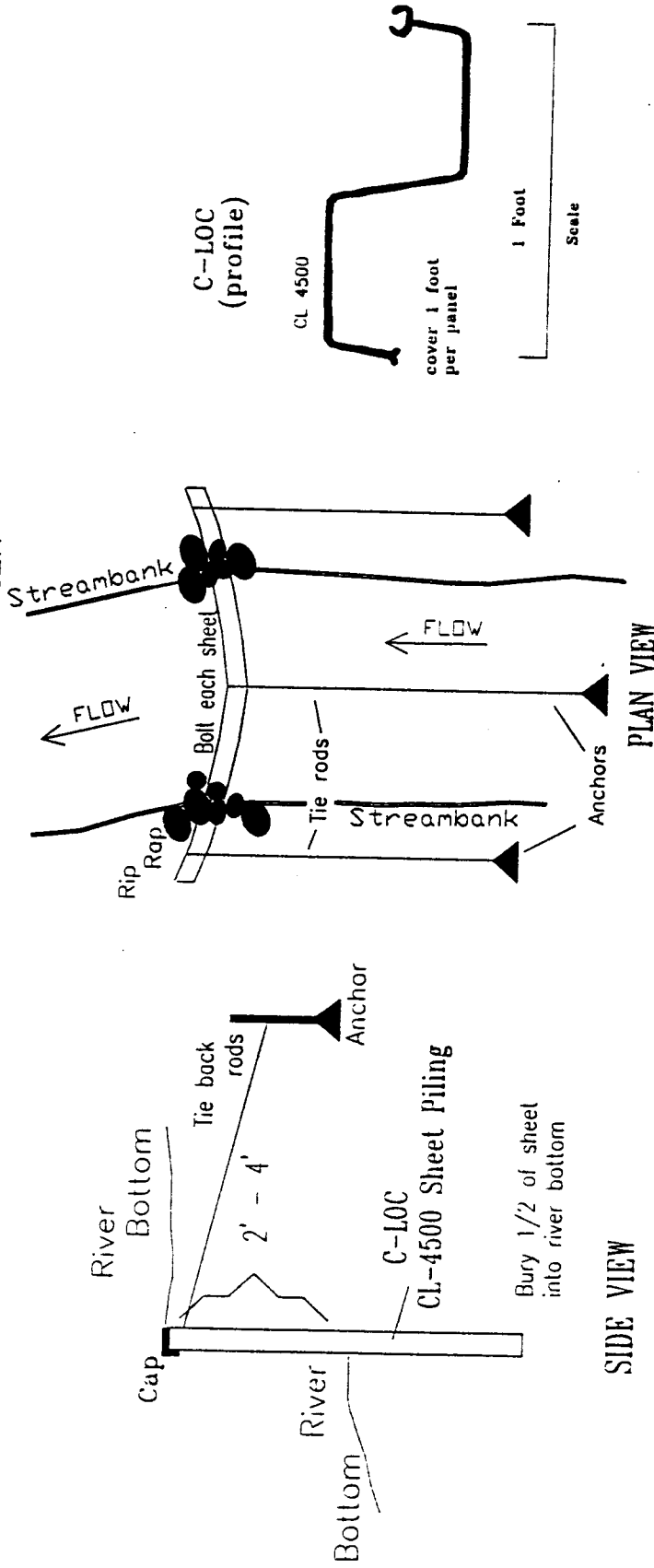
GENERIC GABION FISH BARRIER (Modify to Site)

Large rock on corners to prevent
high water from cutting around structure

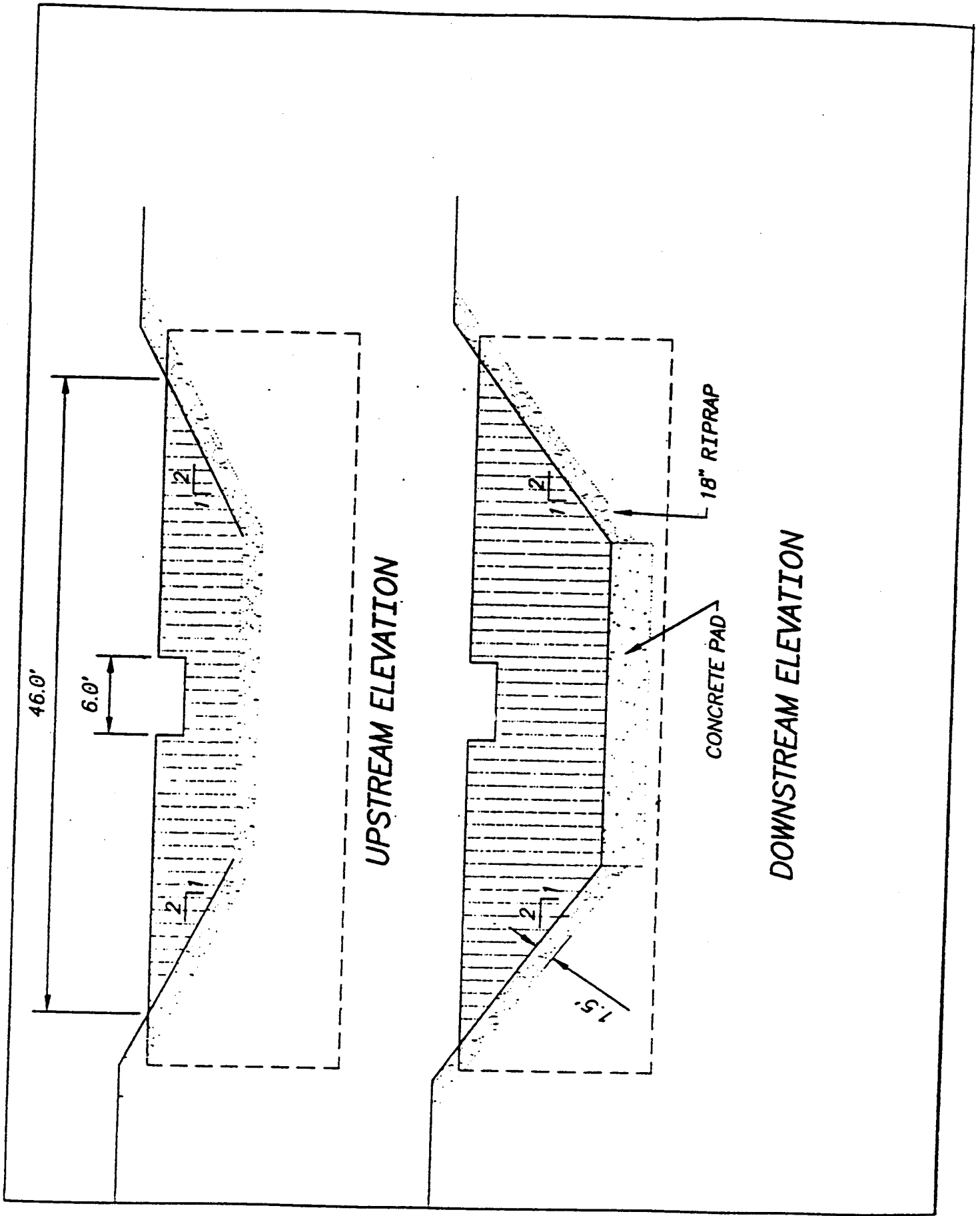


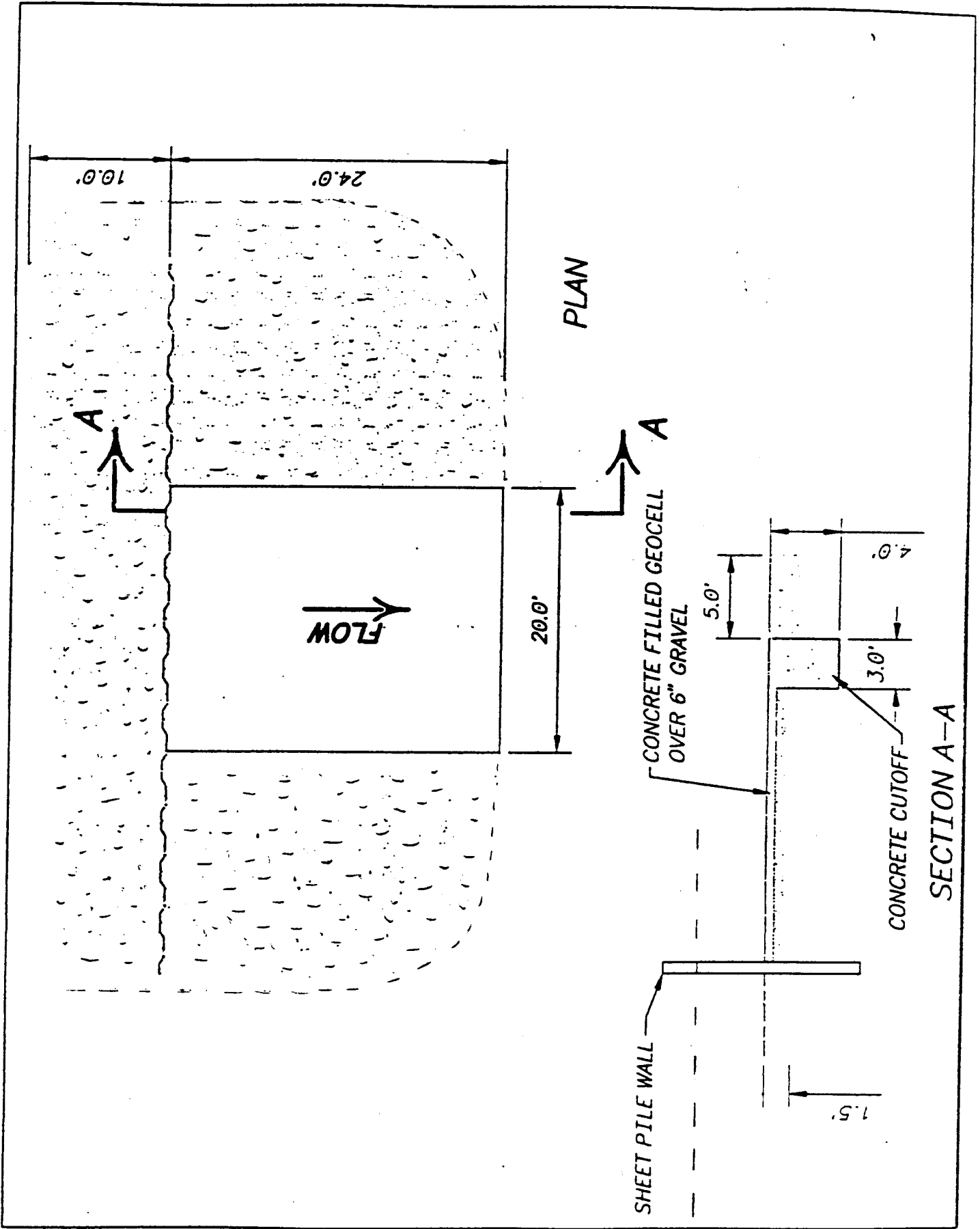
SHEET PILING - GRADE CONTROL

TYPICAL INSTALLATION



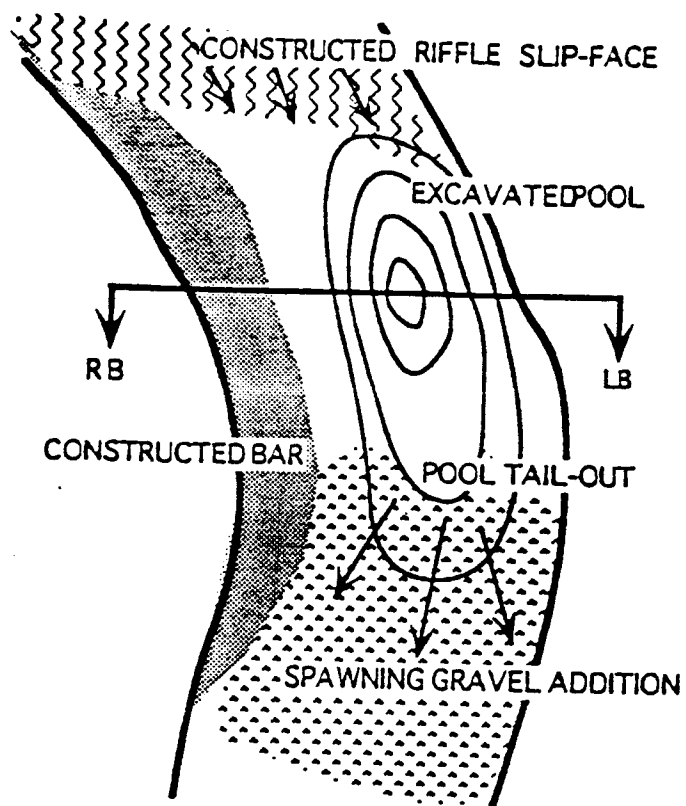
Panel Length	Amount Buried	Tie Back Length	Tie Back Rod Size	Cap Size Wood	Anchor Length
8'	4'	8'	5/8"	4"x4"	3'
10'	5'	10'	5/8"	4"x4"	4'
12'	6'	12'	3/4"	4"x6"	5'
14'	7'	14'	3/4"	6"x8"	6'
16'	8'	16'	3/4"	6"x8"	7'



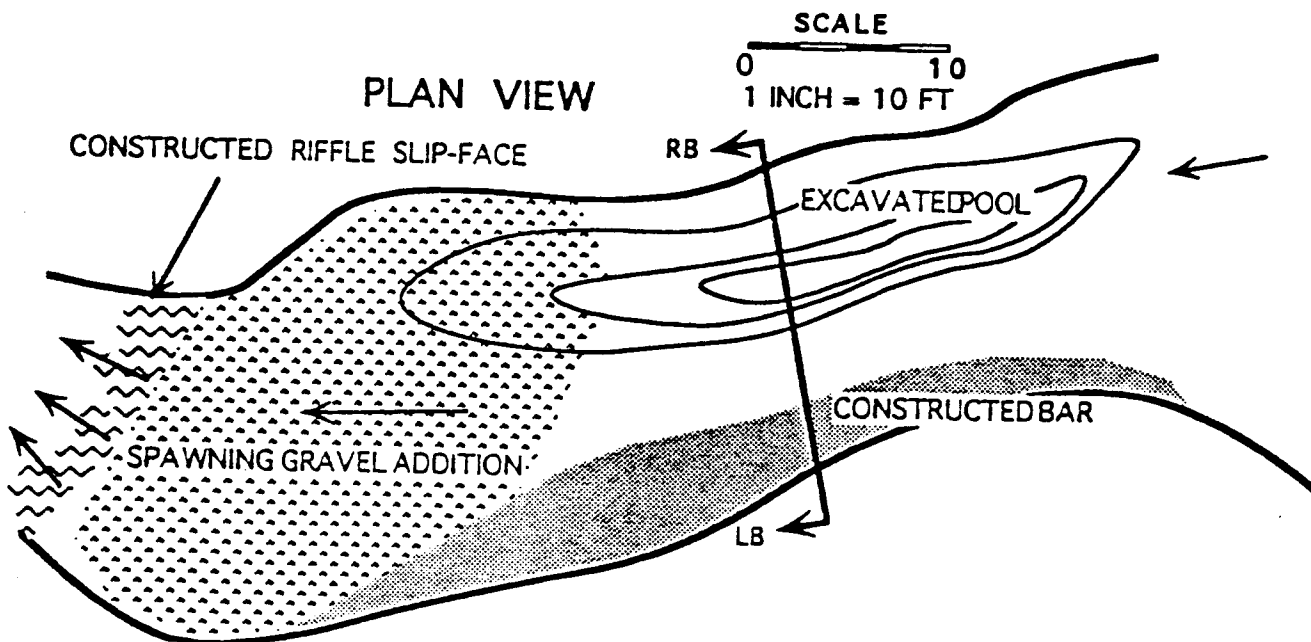


PLAN VIEW

Channel Constriction

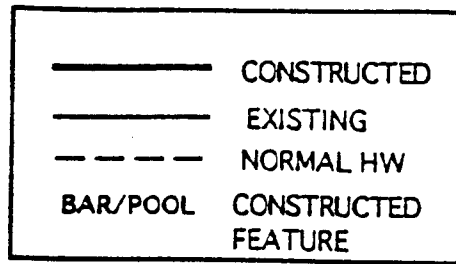


PLAN VIEW

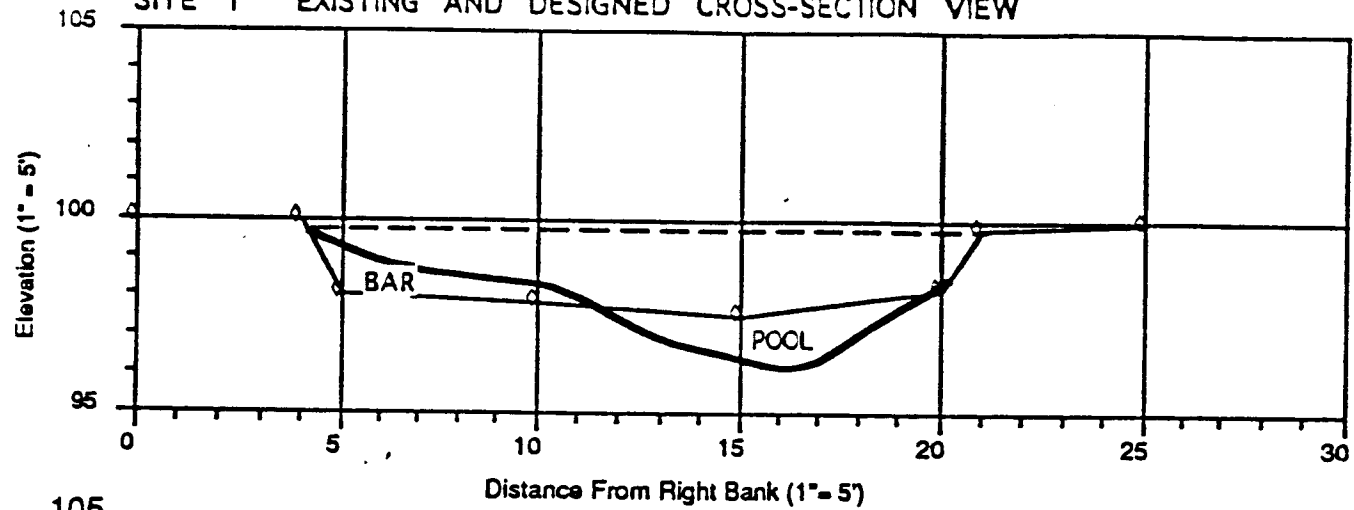


CROSS-SECTION VIEWS

Channel Constriction



SITE 1 EXISTING AND DESIGNED CROSS-SECTION VIEW



SITE 2 EXISTING AND DESIGNED CROSS-SECTION VIEW

